

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-18 (canceled)

Claim 19 (new): A melt-spun polysulfone semipermeable membrane, the melt-spun polysulfone semipermeable membrane consisting essentially of a polysulfone compound and a solvent for the polysulfone compound wherein the melt-spun polysulfone semipermeable membrane has a homogeneous structure such that the melt-spun polysulfone semipermeable membrane has a substantially uniform pore structure throughout a thickness of the melt-spun polysulfone semipermeable membrane.

Claim 20 (new): The melt-spun polysulfone semipermeable membrane of Claim 19, wherein the polysulfone compound is selected from the group consisting of a polyarylsulfone compound, bisphenol A polysulfone, polyether polysulfone, polyphenyl polysulfone, and mixtures thereof.

Claim 21 (new): The melt-spun polysulfone semipermeable membrane of Claim 19, wherein the solvent is selected from the group consisting of tetramethylene sulfone, antipyrine, δ -valerolactam, diethyl phthalate, and mixtures thereof.

Claim 22 (new): A polysulfone semipermeable membrane defined by a composition consisting essentially of a mixture of a polysulfone compound, a solvent for the polysulfone compound, and a non-solvent for the polysulfone compound wherein the mixture has been melt-spun allowing a homogeneous structure to be formed such that the polysulfone semipermeable membrane has a substantially uniform pore structure throughout a thickness of the polysulfone semipermeable membrane.

Claim 23 (new): The polysulfone semipermeable membrane of Claim 22, wherein the polysulfone compound is selected from the group consisting of a polyarylsulfone compound, bisphenol A polysulfone, polyether polysulfone, polyphenyl polysulfone, and mixtures thereof.

Claim 24 (new): The polysulfone semipermeable membrane of Claim 22, wherein the polysulfone semipermeable membrane includes between about 8 and about 80 percent by weight of the polysulfone compound.

Claim 25 (new): The polysulfone semipermeable membrane of Claim 22, wherein the polysulfone semipermeable membrane includes at least about 25 percent by weight of the polysulfone compound.

Claim 26 (new): The polysulfone semipermeable membrane of Claim 22, wherein the solvent is selected from the group consisting of tetramethylene sulfone, 3-methyl sulfolane, benzophenone, n,n-dimethylacetamide, 2-pyrrolidone, 3-methylsulfolene, pyridine, thiophene, o-dichlorobenzene, 1-chloronaphthalene, methyl salicylate, anisole, o-nitroanisole, diphenyl ether, diphenoxy methane, acetophenone, p-methoxyphenyl-2-ethanol, 2-piperidine, antipyrine, δ -valerolactam, diethyl phthalate, diphenyl sulfone, diphenyl sulfoxide, phthalic acid, dioctyl ester, phthalic acid, dimethyl ester, phthalic acid, diethyl ester, phthalic acid, dibutyl ester, phthalic acid, bis(2-ethylhexyl) ester, phthalic acid, benzyl butyl ester, phenyl sulfide, and mixtures thereof.

Claim 27 (new): The polysulfone semipermeable membrane of Claim 22, wherein the solvent is selected from the group consisting of tetramethylene sulfone, antipyrine, δ -valerolactam, diethyl phthalate, and mixtures thereof.

Claim 28 (new): The polysulfone semipermeable membrane of Claim 22, wherein the non-solvent is selected from the group consisting of 1, 1-diethylurea, 1,3-diethylurea, dinitrotoluene, 1,2-ethane diamine, diphenylamine, toluenediamine, o-toluic acid, m-toluic acid, toluene-3,4-diamine, dibutyl phthalate, piperidine, decalin, cyclohexane, cyclohexene,

chlorocyclohexane, cellosolve solvent, n,n-dimethylbenzylamine, paraffin, mineral oil, mineral wax, tallow amine, triethanol amine, lauryl methacrylate, stearic acid, di(ethylene glycol), tri(ethylene glycol), ethylene glycol, poly(ethylene glycol), tetra(ethylene glycol), glycerin, diethyl adipate, d-sorbitol, chlorotriphenyl stannane, resorcinol, 2-methyl-8-quinolinol, quinaldine, 4-phenylpyridine, phosphorothioic acid, o,o-diethyl o-(p-nitrophenyl) ester, N,N-dimethyl-p-phenylene diamine, 2, 6-dimethoxyphenol, 4-allyl-2-methoxyphenol, phenanthridine, 2-naphthylamine, 1-naphthylamine, 1-naphthol, 2-naphthalenethiol, 1-bromonaphthalene, levulinic acid, phenyl pyrrol-2-yl ketone, phenyl 4-pyridyl ketone, isothiocyanic acid, m-nitrophenyl ester, 2-methyl-1H-indole, 4-methyl imidazole, imadazole, 1,7-heptanediol, 9H-fluoren-9-one, ferrocene, 2,2',2''-nitritotriethanol, 2,2'-iminodiethanol, dibenzofuran, cyclohexaneacetic acid, cyanamide, coumarin, 2,2'-bipyridine, benzoic acid, benzenepropionic acid, o-dinitrobenzene, 9-methyl-9-azabicyclo(3.3.1)nonan-3-one, chlorodiphenylarsine, antimony bromide, p-anisidine, o-anisaldehyde, adiponitrile, p-amino acetophenone, monoacetin, diacetin, triacetin, pentoxane, 4-benzoylbiphenyl, methyl oleate, triethylphosphate, butyrolactone, terphenyl, tetradecanol, polychlorinated biphenyl, myristic acid, methacrylic acid, dodecyl ester, isocyanic acid, methylenedi-p-phenylene ester, 2-((2-hexyloxy)ethoxy) ethanol, 4-nitro biphenyl, benzyl ether, benzenesulfonyl chloride, 2,4-diisocyanato-1,1-methyl benzene, adipic acid, diethyl ester, 2'-nitro-acetophenone, 1'-acetonaphthone, tetradecanone, (dichlorophenyl)trichlorosilane, dichlorodiphenyl silane, phosphorothioic acid, o,o-diethyl o-(p-nitrophenyl) ester, phosphoric acid, tri-o-tolyl ester, phosphoric acid, triphenyl ester, phosphoric acid, tributyl ester, phenyl phosphorous dichloride, p-nitrophenol, isocyanic acid, methyl-m-phenylene ester, 2,2'-iminodiethanol, N-(2-aminoethyl)-N'-(2-((2-aminoethyl)amino)ethyl) 1,2-ethanediamine, 2,6-di-tert-butyl p-cresol, chloro biphenyl, 4-biphenylamine, benzyl ether, benzenesulfonyl chloride, 1,2-(methylenedioxy)-4-propenyl benzene, 2,4-diisocyanato-1-methyl benzene, chlorodinitro benzene (mixed isomers), hexahydro 2H-azepin-2-one, 4,4'-methylenedianiline, 1'-acetonaphthone, mercapto acetic acid, acetanilide, glycerol, and mixtures thereof.

Claim 29 (new): The polysulfone semipermeable membrane of claim 22, wherein the solvent and non-solvent are present in a ratio of about 2:1 to about 10:1.

Claim 30 (new): The polysulfone semipermeable membrane of claim 22 wherein the polysulfone compound is composed of bisphenol A polysulfone, wherein the solvent is composed of sulfolane, and wherein the non-solvent is composed of poly(ethylene glycol).

Claim 31 (new): The polysulfone semipermeable membrane of claim 30 wherein the composition includes about 30% by weight to about 38% by weight of the polysulfone compound.

Claim 32 (new): A polysulfone semipermeable membrane having a substantially uniform pore structure throughout a thickness dimension of the polysulfone semipermeable membrane, the polysulfone semipermeable membrane being constructed from a melt-spun composition consisting essentially of a polysulfone compound, a solvent for the polysulfone compound selected from the group consisting of tetramethylene sulfone, antipyrine, δ -valerolactam, diethyl phthalate, and mixtures thereof, and a non-solvent.

Claim 33 (new): The polysulfone semipermeable membrane of Claim 32, wherein the non-solvent is selected from the group consisting of 1, 1-diethylurea, 1,3-diethylurea, dinitrotoluene, 1,2-ethane diamine, diphenylamine, toluenediamine, o-toluic acid, m-toluic acid, toluene-3,4-diamine, dibutyl phthalate, piperidine, decalin, cyclohexane, cyclohexene, chlorocyclohexane, cellosolve solvent, n,n-dimethylbenzylamine, paraffin, mineral oil, mineral wax, tallow amine, triethanol amine, lauryl methacrylate, stearic acid, di(ethylene glycol), tri(ethylene glycol), ethylene glycol, poly(ethylene glycol), tetra(ethylene glycol), glycerin, diethyl adipate, d-sorbitol, chlorotriphenyl stannane, resorcinol, 2-methyl-8-quinolinol, quinaldine, 4-phenylpyridine, phosphorothioic acid, o,o-diethyl o-(p-nitrophenyl) ester, N,N-dimethyl-p-phenylene diamine, 2, 6-dimethoxyphenol, 4-allyl-2-methoxyphenol, phenanthridine, 2-naphthylamine, 1-naphthylamine, 1-naphthol, 2-naphthalenethiol, 1-bromonaphthalene, levulinic acid, phenyl pyrrol-2-yl ketone, phenyl 4-pyridyl ketone, isothiocyanic acid, m-nitrophenyl ester, 2-methyl-1H-indole, 4-methyl imidazole, imadazole, 1,7-heptanediol, 9H-fluoren-9-one, ferrocene, 2,2',2''-nitrilotriethanol, 2,2'-iminodiethanol, dibenzofuran, cyclohexaneacetic acid, cyanamide, coumarin, 2,2'-bipyridine, benzoic acid, benzenepropionic

acid, o-dinitrobenzene, 9-methyl-9-azabicyclo(3.3.1)nonan-3-one, chlorodiphenylarsine, antimony bromide, p-anisidine, o-anisaldehyde, adiponitrile, p-amino acetophenone, monoacetin, diacetin, triacetin, pentoxane, 4-benzoylbiphenyl, methyl oleate, triethylphosphate, butyrolactone, terphenyl, tetradecanol, polychlorinated biphenyl, myristic acid, methacrylic acid, dodecyl ester, isocyanic acid, methylenedi-p-phenylene ester, 2-((2-hexyloxy)ethoxy) ethanol, 4-nitro biphenyl, benzyl ether, benzenesulfonyl chloride, 2,4-diisocyanato-1-methyl benzene, adipic acid, diethyl ester, 2'-nitro-acetophenone, 1'-acetonaphthone, tetradecanone, (dichlorophenyl)trichlorosilane, dichlorodiphenyl silane, phosphorothioic acid, o,o-diethyl o-(p-nitrophenyl) ester, phosphoric acid, tri-o-tolyl ester, phosphoric acid, triphenyl ester, phosphoric acid, tributyl ester, phenyl phosphorous dichloride, p-nitrophenol, isocyanic acid, methyl-m-phenylene ester, 2,2'-iminodiethanol, N-(2-aminoethyl)-N'-(2-((2-aminoethyl)amino)ethyl) 1,2-ethanediamine, 2,6-di-tert-butyl p-cresol, chloro biphenyl, 4-biphenylamine, benzyl ether, benzenesulfonyl chloride, 1,2-(methylenedioxy)-4-propenyl benzene, 2,4-diisocyanato-1-methyl benzene, chlorodinitro benzene (mixed isomers), hexahydro 2H-azepin-2-one, 4,4'-methylenedianiline, 1'-acetonaphthone, mercapto acetic acid, acetanilide, glycerol, and mixtures thereof.

Claim 34 (new): The polysulfone semipermeable membrane of claim 32, wherein the polysulfone compound is selected from the group consisting of a polyarylsulfone compound, bisphenol A polysulfone, polyether polysulfone, polyphenyl polysulfone and mixtures thereof.

Claim 35 (new): The polysulfone semipermeable membrane of claim 32, wherein the solvent and non-solvent are present in a ratio of about 2.5:1 to about 4.5:1.

Claim 36 (new): The polysulfone semipermeable membrane of claim 35 wherein the polysulfone compound is composed of bisphenol A polysulfone, wherein the solvent is composed of sulfolane, and wherein the non-solvent is composed of poly(ethylene glycol).

Claim 37 (new): The polysulfone semipermeable membrane of Claim 35 wherein the melt-spun composition includes about 30 to about 38 percent by weight of the polysulfone compound.